REMARKS

I. Status of the Claims

Claims 8-24, 26-29 and 39-41 are pending in this application. Claims 7 and 25 were canceled in response to an Office Action dated May 9, 2005. Claims 1-6 were canceled in response to an Office Action dated March 6, 2006. Claims 30-38 have been withdrawn from consideration. Claims 8-24, 26-29, and 39-41 have been rejected. Claims 11 and 12 have been amended as discussed herein. Claims 13 and 14 have been amended to capitalize the term "type" to be consistent with the recitation in other claims. *See, e.g.*, claim 8.

II. Rejections under 35 U.S.C. § 112, ¶ 1

The Examiner has rejected claims 8-24, 26-29 and 39-41 under 35 U.S.C. § 112, ¶ 1, as allegedly failing to comply with the enablement requirement. *Office Action* at pp. 2 and 4. Applicants respectfully traverse this rejection.

The Examiner alleges that the specification does not enable "the treatment of diabetes with Gibberellins of Formula (1)." *Id.* at 2. The Examiner admits the specification enables the treatment of diabetes with Gibberellin A3 and a mixture of Gibberellin A3 and A4/A7, but alleges the treatment of diabetes with Gibberellins of formula (1) is not enabled due to the number of species encompassed in the claimed genus. *Id.* at p. 3. Applicants respectfully disagree.

Specifically, the Examiner alleges that the disclosure of Gibberellin A3 and its effect on blood glucose does not provide an adequate basis to support the formula (I) genus because a "*single* species usually does not provide an adequate basis to support generic claims." *Id.* at p. 3 (emphasis added). The Examiner contends that the

specification "discloses a single specific compound and said compound with A4/A7 mixture." *Id.*

"The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent *coupled with information known in the art* without undue experimentation." M.P.E.P. § 2164.01 (emphasis added). Moreover, the Federal Circuit has stated that Applicants "are not required to disclose each and every species encompassed by their claims even in an unpredictable art." *In re Angstadt*, 537 F.2d 498, 504 (CCPA 1976). The Court has also noted that a genus may be enabled "by showing the enablement of a *representative number* of species within the genus." *Regents of Univ. of Cal. v. Eli Lilly & Co.,* 119 F.3d 1559 , 1569 (Fed. Cir. 1997) (emphasis added). Finally, "[f]or a claimed genus, representative examples together with a *statement applicable to the genus as a whole* will ordinarily be sufficient if one skilled in the art …would expect the claimed genus could be used in a manner without undue experimentation." M.P.E.P. §2164.02 (emphasis added).

The Examiner has neglected to consider the disclosed Gibberellin A4 and A7 species, in addition to Gibberellin A3. Thus, Applicants disclose a total of three (3) species representative of the formula (I) genus. In addition to the three representative examples of Gibberellin species disclosed, the specification contains a "general statement applicable to the genus as a whole." *See* M.P.E.P. §2164.02. For example, such Gibberellins in general "possess growth factor (such as IGF, EGF) like properties" that act "on a broader (less specific) base than that of the more complex life forms such as animals." *Specification* at p. 4. Additionally, "compounds of formula (1) possess activity as insulin and insulin like agonists and/or sensitizers for the treatment of

diabetes, its complications and associated conditions..." *Id.* at p. 12. The specification further indicates that Gibberellins may act as substitutes or sensitizers for growth factors, including IGF-1, which elicit effects similar to insulin. *Id.* at p. 5.

Additionally, Examples 3 and 4 of the present application (pp. 20-21) demonstrate that minor variations in structure have little or no effect on the *growth factor-mimicking* activity of Gibberellins in mammalian cells. Examples 5 and 6 (pp. 21-23) demonstrate that such variations elicit little or no effect on the *anti-diabetic* activity of Gibberellins. Moreover, the specification provides a method by which the skilled artisan can test the efficacy of the compounds encompassed by the claims. *See, id.* at pp. 22-23. Thus, based on the disclosed Gibberellin compounds and teachings concerning the general efficacy of compounds encompassed by the formula (1) genus as a whole, Applicants respectfully submit that the specification would enable a person of ordinary skill in the art to practice the invention without undue experimentation.

Accordingly, Applicants respectfully request withdrawal of this rejection under 35 U.S.C. § 112.

The Examiner has also rejected claims 8-16 and 39-41 for lack of enablement under 35 U.S.C. § 112, ¶ 1. *Office Action* at p. 4. The Examiner alleges that while the specification is enabling for the treatment of diabetes, it does not "reasonably provide enablement for the complications and associated conditions claimed." *Id.* Specifically, the Examiner asserts that the specification "fails to provide guidance as to the effectiveness of the claimed methods." *Id.* According to the Examiner, no evidence suggests that a lowering of blood glucose may aid in the treatment of diabetes-related complications. *Id.* The Examiner asserts that "there is good reason to doubt" the

effectiveness of Gibberellins in treating obesity due to the observed weight increase observed in groups 1 and 3-5 of the working examples in the specification. *Id.* at 5.

Applicants respectfully disagree with the Examiner's assertions, and request withdrawal of this rejection under 35 U.S.C. §112.

First, Applicants respectfully submit that one of ordinary skill in the art would readily recognize that administering a medicament to decrease blood glucose levels would aid in the treatment of diabetes-related complications, including obesity. The major stimulant of insulin secretion is an increase of local blood glucose levels in the pancreas. *Recent Progress in Hormone Research* 59:267-285 (2004). In fact, as early as 1967, research has demonstrated that "the degree of glucose-stimulated insulin secretion is a direct function of body fat." *Id.* In general, achieving normal blood-glucose levels indicates the effective treatment and management of complications and associated conditions that arise in diabetics. *See, e.g., Declaration of Dr. Peter Jenkins filed September 9, 2005* at p. 5.

Second, the term *obesity* is defined as "a condition characterized by the excess accumulation of *fat* in the body." See Webster's Collegiate Dictionary 855 (11th ed. 2003) (emphasis added). However, the 30-day body weight change of the rats exemplified in groups 1 and 3-5 does not necessarily indicate an increase in fat mass. *See Specification* at pp. 22-23. The rats that gained weight in groups 1 and 3-5 were treated for diabetes over a 30-day period. *Id.* Unlike group 2, these groups maintained blood glucose levels far below the diabetic range of $\geq$16mM. *Id.* Many plausible reasons for the observed weight gain may be posited. For example, the rats may have decreased their fat mass while gaining muscle mass or retaining liquid, which led to an

overall weight gain. In contrast, the Examiner has failed to provide any evidence or technical reasoning to attribute the observed weight gain to a particular cause. Therefore, groups 1 and 3-5 do not provide a basis for the Examiner's allegation that Gibberellins of formula (I) are "ineffective" against obesity.

In addition to obesity, the Examiner has lodged similar arguments against micro- and macrovascular disease, nephropathy, neuropathy, and eye diseases. *Office Action* at p. 4. Specifically, the Examiner asserts that there is no evidence that lowering blood glucose will result in the treatment of such diseases "once those diseases are established." *Id.*

However, the cause-and-effect relationship between blood glucose concentrations and the aforementioned complications is well known in the art. *See, e.g., The New England Journal of Medicine*, 329: 304-309 (1993). For example, a reduction in blood sugar has been shown to slow and, in some instances, even reverse the detrimental effects of diabetes-related complications. *Id.* Reichard *et al.* demonstrated that lowering blood glucose concentrations in diabetic patients retards the advancement of microvascular complications in patients with diabetes. *Id.* In addition, research has shown a similar decrease in the effects of retinopathy and nephropathy when there is a decrease in the level of chronic hyperglycemia in diabetic patients. *The New England Journal of Medicine,* 342: 381-389 (2000). This evidence directly contradicts the Examiner's assertion that no evidence exists to link decreasing blood glucose levels of a diabetic patient with treating the claimed complications.

In summary, the Examiner alleges that the specification does not sufficiently enable the treatment of either diabetes-related complications or its associated

conditions. However, Applicants have demonstrated the contrary and submit that the present application is enabling for the methods of treatment for Type I and/or Type II diabetes and its complications. When the skilled artisan's knowledge is further combined with the teachings provided in the specification, the skilled artisan would not have to resort to undue experimentation to practice the claimed invention.

Accordingly, Applicants respectfully request withdrawal of this rejection under 35 U.S.C § 112.

III. Rejections under 35 U.S.C. § 112, ¶ 2

The Examiner has rejected claims 11-15 under 35 U.S.C. § 112, ¶ 2, as allegedly failing to particularly point out the Applicant's invention. *Office Action* at p. 5. While Applicants respectfully disagree with the position of the Examiner, to advance prosecution, claims 11 and 12 have been amended to recite "Type I or Type II." Accordingly, Applicants respectfully submit that no new matter has been added with the amendments to claims 11-14.

IV. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

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By: Gretchen Peterson
Gretchen S. Peterson
Reg. No. 57,404